

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

# Factoring Guess & Check

$$\begin{aligned} (+1)(+1) &= (+1) \\ (-1)(-1) &= (+1) \end{aligned}$$

$$\begin{aligned} (-1)(+1) &= (-1) \\ (+1)(-1) &= (-1) \end{aligned}$$

1.  $x^2 - 6x + 8$

Negative Both

$[A \cdot B]$	$(A + B)$	
$(-1)(-8)$	$(-1) + (-8)$	-9
$(-2)(-4)$	$(-2) + (-4)$	-6

Answer:  $(x - 2)(x - 4)$

Positive 2nd term indicates  
The sign of both factors

**DO SECOND**

$$x^2 - 7x + 10 =$$

**DO FIRST**

Positive (+) 3rd term indicates

- A and B are both positive  $(+A)(AB)$  or
- A and B are both negative  $(-A)(-B)$

**DO THIRD**

Factors	
$\frac{10}{(1)(10)}$	A and B are both negative $(-A)(-B)$
$(2)(5)$	

Answer  
 $= (x - 2)(x - 5)$

2.  $x^2 + 12x + 27$

Positive Both

$[A \cdot B]$	$(A + B)$	
$(1)(27)$	$( ) + ( )$	_____
$( ) ( )$	$( ) + ( )$	_____

Answer:

Positive 2nd term indicates  
• The sign of both factors

**DO SECOND**

$$x^2 + 7x + 10 =$$

**DO FIRST**

Positive (+) 3rd term indicates

- A and B are both positive  $(+A)(AB)$  or
- A and B are both negative  $(-A)(-B)$

**DO THIRD**

Factors	
$\frac{10}{(1)(10)}$	A and B are both positive $(+A)(+B)$
$(2)(5)$	

Answer  
 $= (x + 2)(x + 5)$



3.  $x^2 + 8x - 180$

Larger (+)

$[A \cdot B]$	$(A + B)$	
$(-1)(180)$		
$(-5)(36)$	$(-5) + (36)$	$+31$
$(-10)(18)$	$(-10) + (18)$	$+8$

Answer:

Positive (+) 2nd term indicates

- The sign of the larger factor

**DO SECOND**

$$x^2 + 3x - 10 =$$

**DO FIRST**

Negative (-) 3rd term indicates

- That one factor is negative, and one factor is positive

**DO THIRD**

One factor is

**DO FOURTH**

Factors

negative

Factors

SUM

$$\begin{array}{r} 10 \\ (1)(10) \\ (2)(5) \end{array}$$

$$(+A)(-B)$$

$$(-A)(+B)$$

$$\begin{array}{r} 10 \\ (-1)(10) \\ (-2)(5) \end{array}$$

$$\begin{array}{r} A + B \\ (-1) + (10) = +9 \\ (-2) + (5) = +3 \end{array}$$

The larger factor is  
Positive (+).

Answer  
 $= (x-2)(x+5)$

9.  $x^2 - 37x - 120$

$(A + B)$        $[A \cdot B]$       Use

Check using FOIL:

10.  $x^2 + 37x - 120$

$(A + B)$        $[A \cdot B]$       Use

Check using FOIL:



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3.  $x^2 - 3x - 54$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

4.  $x^2 + 3x - 54$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

5.  $x^2 - 35x + 200$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

6.  $x^2 - 45x - 200$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:



3.  $x^2 - 20x - 125$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

4.  $x^2 - 30x + 125$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

9.  $x^2 - 6x - 135$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL:

10.  $x^2 + 6x - 135$

$(A+B)$        $[A \cdot B]$       Use

Check using FOIL: